A Guide for Automotive Machine Shops

WASHINGTON STATE
DEPARTMENT OF
ECOLOGY

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Department of Ecology
Publications
P.O. Box 47600
Olympia, WA 98504-7600

Please include your street address for UPS delivery

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CRO (TDD) (509) 454-7673 NWRO (TDD) (425) 649-4259
ERO (TDD) (509) 458-2055 SWRO (TDD) (360) 407-6306

Why Should Automotive Machine Shops Pay Attention to Their Wastes?

Automotive machine shops across the state regularly generate hazardous wastes. Parts cleaning, machining and other activities in your machine shop produce hazardous wastes such as spent hot tank solution, dirty rinsewater, spent solvents and sludges from all of these.

If improperly managed, these wastes may threaten the safety of you and your co-workers, damage the environment, or put your entire community at risk. Hazardous wastes can cause cancer and nerve damage and pollute drinking water supplies.

Your role in protecting public health and the environment is vital. Machine shop hazardous wastes don't belong on the ground, down the drain or in the dumpster. Good hazardous waste management practices are important for many reasons:

- You will ensure that you're in compliance with hazardous waste regulations and avoid costly penalties.
- You may save money by finding ways to reduce or recycle your wastes.
- You will be joining other machine shops in Washington state that are taking pride in maintaining a clean and healthy environment.
- You may gain customers who know they have made a wise choice when selecting a shop that protects the environment.

Automotive Machine Shop Wastes
Practical Do's and Don'ts

Some common wastes generated by automotive machine shops are described below, along with do's and don'ts for managing them safely and in compliance with the regulations. Make sure you find out what size of generator you are and what responsibilities you have, beginning on page 14.

Aluminum Parts Cleaner

Often a 5-gallon bucket of carburator cleaner is used to clean aluminum parts. This spent solvent, typically methylene chloride, is toxic and persistent. If another solution is used, such as hot vat aluminum cleaner, the spent solution could still typically be hazardous for heavy metals or corrosivity.

Do's

✔ Switch to a non-chlorinated solvent for aluminum parts cleaning.

✔ Accumulate all sludge and dispose of as hazardous waste.

✔ Have a firm pick up your waste solvent for off-site recycling.

✔ If you do use a chlorinated solvent, consider using the dirty but still useable solvent in your valve tumbler or elsewhere.

Don'ts

✘ Don't dispose of spent aluminum cleaner down any storm drain, septic system or dry well.

✘ Don't dispose of spent aluminum cleaner, especially cold tank carb cleaner, down the sewer.

✘ Don't put aluminum cleaner sludge into the dumpster or on the ground.

Floor Cleaning Waste Water ◆

If floors are kept generally clean to begin with and a non-toxic floor cleaner is used, wash water from floor cleaning shouldn't typically be hazardous. However, wash water may contain heavy metals and grease that need to be treated before discharging to the sewer, in order to meet water quality discharge limits.

Do's

✔ Keep your floors clean to begin with. Catch leaks before they hit the floor and place in appropriate waste container.

✔ Clean small, non-chlorinated spills immediately with absorbent. Sweep and save for reuse until absorbing ability is gone. It can then go in the dumpster (with local landfill approval).

✔ Receive permission from your local sewer utility for your floor cleaning wastes to enter the sewer.

Don'ts

✘ Don't use absorbants to clean-up chlorinated solvents and then dispose in the dumpster. These are hazardous wastes.

✘ Don't let floor cleaning waste water go to an outside or inside storm drain, dry well, or septic system.

Check with your sewer utility or city engineering department to find out for sure where your drains lead - most outside drains and some inside drains don't go to a sewage treatment plant, but instead are storm drains that lead directly to a stream, lake or ditch or to drywells which may contaminate ground water.

Glass Bead Dust and Steel Shot Residue ◆

Because the nature of dust from glass bead blasters and residue from steel shot machines varies from shop to shop, it is the shop's responsibility to determine if these wastes are hazardous. If they are, it will most likely be for high lead or cadmium content.

Do's

✔ Determine through your own knowledge or testing whether these wastes are hazardous. (See page 12 for discussion on testing.)

✔ If hazardous, collect residue in a separate container and dispose of as hazardous waste.

Don'ts

✘ Don't forget to keep copies of test results or waste profiles.

✘ Don't put this waste in the dumpster unless you know it isn't hazardous.

Machining Coolants and Sludges

Machining coolants and sludges created when honing or grinding parts may or may not be hazardous, depending on the type of fluid and parts machined. It is the generator's responsibility to determine if these wastes are hazardous.

Do's

- ✔ Use water-based coolants that don't contain chlorinated compounds.
- ✔ Determine through your own knowledge or testing whether these wastes are hazardous. (See page 12 for discussion on testing.)
- ✔ If the sludge isn't hazardous, ask your scrap metal dealer if they'll take the metal grinding wastes in it, along with your filters.
- ✔ If you're using cutting oils when machining, ask your waste oil handler if you can dispose of these to your used oil container.

Don'ts

- ✘ Don't forget to keep copies of test results or waste profiles.
- ✘ Don't put this sludge in the dumpster unless you know it isn't hazardous.
- ✘ Don't forget to collect sludge in separate, marked containers and dispose of properly if hazardous waste.

Oven and Tumbler Residue

If you use an oven and tumbler to clean parts, the waste will typically be hazardous due to heavy metals. Unless you have test results that show otherwise, dispose of these residues as hazardous waste.

Do's

- ✔ Determine through testing whether these wastes are hazardous. (See page 12 for more information about testing.)
- ✔ Keep copies of test results.

Don'ts

- ✘ Don't put this waste in the dumpster unless you know it isn't hazardous.

PAINTS ◆

If you use spray cans to paint blocks and you use up the entire can, they can be disposed of in the dumpster (with local landfill approval). Cans that still have product in them should be handled as hazardous waste. Paint filters, and masking materials typically are not hazardous waste, but you should check with your local landfill before putting these wastes in the garbage.

RINSE WATER AND RINSE WATER SLUDGE ◆

Rinse water from parts cleaning and rinse water sludge is typically hazardous because of heavy metal content. Excess oil and grease is also a water quality concern.

Do's

✔ Reuse rinse water by using a recirculating spray cabinet system with a filter.

✔ Add dirty rinse water as make up water in the hot tank (in which case the rinse water isn't a waste).

✔ If you plan to evaporate hazardous rinse water to reduce its weight and volume, see discussion on page 11.

✔ If any rinse water enters the sewer, get permission from your local sewer utility - for example, if you take engine parts out of a hot tank and hose them off directly to a sewer drain.

✔ Close off any drains leading to storm sewers, dry wells, or septic systems.

Don't's

✘ Don't dispose of rinse water into any storm drain, septic system or dry well. This can lead to water contamination and liability problems for you.

✘ Don't put rinse water sludge into the dumpster or on the ground.

✘ Don't forget to accumulate rinse water sludge in sturdy, closed containers and dispose of as a hazardous waste.

Check with your sewer utility or city engineering department to find out for sure where your drains lead - most outside drains and some inside drains don't go to a sewage treatment plant, but instead are storm drains that lead directly to a stream, lake or ditch or to drywells which may contaminate ground water.

Shop Towels ◆

If your shop towels are handled according to the advice below, they do not need to be managed and counted as a hazardous waste. If your towels are being disposed of they are hazardous waste if they fail any hazardous waste tests (ignitable, toxic, etc.) or have listed solvents on them.

Do's

- ✔ Use cloth towels which can be cleaned and reused.
- ✔ When possible, use less hazardous cleaning solvents (ones without chlorinated compounds).
- ✔ See if the laundry/recycling facility you use is meeting local sewer discharge limits. Laundries/ recyclers that discharge their waste water to a drain field should be avoided.
- ✔ Keep waste shop towels in a closed container marked "CONTAMINATED SHOP TOWELS ONLY".

Don'ts

- ✘ Don't throw dirty towels into your dumpster.
- ✘ Don't saturate towels. If you do, wring them out and reuse the liquid.
- ✘ Try not to use disposable paper towels or rags. If you do, see if they designate as a hazardous waste and handle appropriately.
- ✘ Don't dispose of solvents by pouring them into containers of used shop towels.

Solvent Tanks or Parts Washers ◆

Parts washer solvent tanks used for cleaning smaller parts and tools are often provided by waste haulers. Solvents used include mineral spirits, Stoddard solvent, petroleum naptha, etc., and they become hazardous wastes the moment the waste service company exchanges the waste tank with a fresh tank. These spent solvents are hazardous because they are ignitable and/or toxic. Other solvents, such as those used for spot cleaning or in valve tumblers, are typically hazardous too.

Do's

- ✔ Consider using a filter on aqueous tanks and solvent tanks with high suspended solids (diesel carbon).
- ✔ Extend the life of the solvent by topping off the tank from time to time.

Don'ts

- ✘ Don't dispose of spent solvents to drains, the air, or the ground.
- ✘ Don't dry parts just cleaned with an air hose. This simply wastes solvent and creates unnecessary VOC's.

Do's

✔ Consider purchasing or leasing a parts washer with a solvent still attached and recycling solvent on site. (Sludges, filters and still bottoms may be hazardous.)

✔ Consider purchasing your own solvent still and recycling solvent on site. (Sludges, filters and still bottoms generated from on-site solvent recycling are typically hazardous). *See Autobody Book.*

✔ If you recycle on-site, keep a log of dates, recycled amounts and batch make-up amounts.

✔ Make sure solvent is actually too dirty to use anymore before it is exchanged for new solvent.

✔ If you have other solvents, keep them in seperate, labeled containers.

✔ Do remember to keep a log of dates, recycled amounts if you recycle on site

Don'ts

✘ Don't mix solvents with any other waste and keep different types of solvents in separate, labeled, closed containers.

✘ Don't get solvents near used oil.

✘ Don't use spray cans over solvent tanks. This causes contamination of the solvent in the solvent tank.

Spent Hot Tank Solution

Whether a dip tank or a spray cabinet style, hot tanks used for cleaning oily/greasy parts aren't changed very often. When they are, the sludge and tank solution typically become hazardous waste due to heavy metal content and their corrosive nature.

However, if certain BMP's are met during treatment (evaporation, separation, neutralization) within the process tank, only the remaining sludge needs to be counted toward monthly hazardous waste totals (see page 11).

Do's

- ✔ Extend "tank" life by pre-scraping buildup from large parts or pre-cleaning with pressurized water. This may extend the life of the tank by several months, but make sure the waste water meets local sewer limits if it is disposed to the sewer.
- ✔ If you plan to evaporate hot tank solution to reduce weight and volume, see discussion on page 11.
- ✔ Accumulate all sludge in a closed, marked container and dispose of as hazardous waste.
- ✔ Cut down on amount of caustic wastes and long term costs by using alternate methods of cleaning such as ovens.

Don'ts

- ✘ Don't dispose of spent hot tank solution down any drain or on the ground.
- ✘ Don't put hot tank sludge into the dumpster or on the ground.
- ✘ Don't forget to check Ecology's treatment by generator fact sheets (see page 21) for guidance if you plan to neutralize and/or separate metals from the solution.

Spent Rust Inhibitor

For those shops with a rust inhibitor dip tank, any spent inhibitor is toxic and should be disposed of as a hazardous waste.

SUMP SLUDGES ◆

Sludges from your sump or oil/water separator may be a hazardous waste. You'll need to test the sludge at a professional laboratory to determine if it is hazardous, or save the cost of testing and assume it is hazardous and manage it accordingly.

Do's

✔ Have the sludge tested when pumped out (see page 12). Keep test records.

✔ If the sludge is a hazardous waste, send it to a hazardous waste management facility.

Don'ts

✘ Don't put hazardous sludge in the dumpster or on the ground.

✘ Don't use a septic tank pumping service to remove this sludge. There is no legal, environmentally safe way for these services to dispose of the waste if it is hazardous.

USED OIL ◆

EPA's decision not to list used oil as a hazardous waste means little change in the way machine shops in Wasington state need to manage used oil. Used oil is regulated as a hazardous waste only if it has been mixed or contaminated with hazardous wastes such as solvents, or if it isn't recycled. (Recycling includes burning for energy recovery.)

Do's

✔ Keep used oil in a separate container marked "USED OIL ONLY".

✔ Place your container in a secure area and train your technicians to keep it secure.

✔ Make sure used oil is tested to be "on spec" if you receive (or give) oil for burning from another business.

✔ Keep records of used oil testing and shipments.

Don'ts

✘ Don't ever dispose of used oil to a storm drain, septic tank, dry well, sewer or dumpster.

✘ Don't accidentally contaminate used oil by mixing it with even small amounts of brake cleaner or carb cleaner. This could turn the whole load into a hazardous waste.

✘ Don't pour used oil on the ground, even for dust suppression.

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Do's

✔ If you're using an oil skimmer when cleaning parts, ask your waste oil handler if you can add this oil to your used oil container.

✔ Contact your nearest Ecology regional office (see back cover) for guidance on used oil burners.

Don'ts

✘ Don't mix used oil with incompatible wastes such as brake fluid, power steering fluid or used antifreeze.

✘ Don't mix your used oil or "do-it-yourselfer" used oil with any other waste if you plan to burn it in your shop for heating.

EVAPORATORS

If certain conditions are met, evaporator units designed to reduce the weight and volume of some wastes by removing water are an allowable technology.

To use an evaporator, there are several things you need to do:

- Use only inorganic wastes in evaporator units. Inorganic wastes that might be evaporated include spent caustics, rinsewaters and water-based machining coolants;
- Don't use organic solutions, such as solvents, paints or oils in evaporators;
- Leave some water content in the remaining sludge -- don't "over cook" evaporator wastes;
- Dispose of remaining sludge properly -- it will typically be hazardous;
- Include a comment on your Form 2 that you are a generator evaporating waste;
- Report on your annual report the amounts of hazardous wastes present prior to evaporation and the remaining hazardous sludge.

Other things to consider include:

- Incorporating secondary containment around the evaporator to catch a spill;
- Condensing evaporator steam and reusing it in your caustic or rinse water tanks;
- Calling your local air quality authority to approve evaporator use.

TREATMENT IN PROCESS TANKS

Hazardous wastes generated in process tanks such as spent caustic hot tank solutions, are excluded from hazardous waste requirements until the time they are removed from the tank, provided the following best management practices are followed:

1) The treatment process may not under any circumstances:
   - Generate extreme heat or pressure, fire or explosion, or violent reaction;
   - Produce uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health or the environment;
   - Produce uncontrolled flammable fumes or gasses in sufficient quantities to pose a risk of fire or explosions;
   - Damage the structural integrity of the unit holding the waste; or
   - Through other similar means, threaten human health or the environment.

(continued)

TREATMENT IN PROCESS TANKS (CONTINUED) ---------- ◆

2) Generators must ensure that the process tank is compatible with the materials used for treatment and that it is designed to be operated under the treatment conditions.
3) Generators must ensure that employees are familiar with proper treatment procedures, waste treatment residuals handling and emergency procedures relevant to treatment operation.
4) Generators must develop an analysis plan that ensures that the waste is treated in an appropriate, safe manner and that ensures that waste treatment residuals are properly designated.
5) The waste generated in a process tank must be treated or removed within 90 days from the time the tank is taken out of service.
6) If the waste treatment residuals designate as dangerous waste, all treatment residuals must be removed from the tank within 90 days from the time the tank is taken out of service.
7) The resulting treatment residuals must be managed and disposed of in accordance with state and local requirements.
8) The performance standards of WAC 173-303-283(3) apply to generators who treat waste generated in process tanks.

TESTING ---------- ◆

Sometimes sending a sample of waste to a laboratory for analysis is the only way to determine if the waste is hazardous. Important tests for machine shops include those for pH, volatile organics, total petroleum hydorcarbons and heavy metals. If you test a waste once, and continue to use the same industrial process, you may apply those test results when designating future batches of the same waste. For example, if you test your spent machining coolant sludge once and find it to be non-hazardous, you may use this knowledge for future disposal of this waste. If you need testing done, request Ecology's Hazardous Waste Services Directory or ask your association for help in locating a reputable lab.

POLLUTION PREVENTION PLANNING REQUIREMENTS ---------- ◆

If you generate more than 2,640 pounds of hazardous waste per year (this is an average of 220 lbs/month), you are required to prepare a pollution prevention plan and pay a planning fee. (See pages 14-15 to determine the amount of waste you generate.)

For more information, contact your nearest Ecology waste reduction and recycling specialist at: Bellevue (425) 649-7000, Olympia (360) 407-6300, Spokane (509) 456-2926 or Yakima (509) 575-2490.

Why Not Reduce and Recycle Your Wastes?

Reducing hazardous waste in your machine shop makes good business sense. Reducing waste, *before* you generate it, can help you to:

- ✔ avoid longterm liability concerns associated with generating hazardous wastes,
- ✔ save on hazardous waste management costs, and
- ✔ help create a healthier, safer work environment.

It may not be as hard as you think. A good place to start is to walk through your shop and review all of the processes which use toxic chemicals or generate hazardous waste. Pages 2 to 10 in this book will help you determine which wastes are likely to be hazardous.

As you consider each process, ask yourself if you can change the process in some way so that it doesn't produce hazardous waste. Some options to think about are:

Substituting a less toxic raw material

- Use pressurized water for initial preclean instead of caustic jet spray.
- Use a non-chlorinated multi purpose cleaner to replace carb cleaner for cleaning alumininum. *Always ask for an MSDS before ordering any new product. Biodegradable does not necessarily mean environmentally safe, or that the product is exempt from regulations. Safe products that are mixed with hazardous substances, like oil or heavy metals, may need to be handled as hazardous waste.*

Use good operating practices

- Solvent losses due to evaporation, equipment leaks or spills and inappropriate usage can range from 25-40%. Keep lids on all dip tanks which use solvents. Use dirty solvent first when cleaning parts. Increase drip time over tanks to allow cleaning solutions to completely drain back into cleaning tank.

Change your process

- Investigate the use of an oven to bake off grease instead of using a caustic hot tank. While this system may be a big expense at first, it can save you money in the long run by reducing your use of chemicals, hazardous waste disposal costs and liability.
- Use a filter on parts washers to extend the life of the solvent.
- Reuse spent rinsewater as makeup in your hot tank.

Recycle wastes and waste water which you can't reduce

- Contract for a recycling service to pick up used solvent.
- Consider an on-site distillation unit to recycle spent solvents.

YOUR REQUIREMENTS AS A GENERATOR

Machine shops become Regulated Generators when they generate more than 220 lbs. of hazardous waste per month or batch or ever have more than 2,200 lbs. of hazardous waste on-site. Shops that generate less are Small Quantity Generators. 220 lbs. is about one half of a 55-gallon drum. Answer the following questions about the amount of hazardous waste your shop generates to determine your requirements as a generator. *Remember: Solvents, hot tank solutions and other substances are not wastes until the day they are no longer usable or used.*

HOT TANK SLUDGE[1]
(multiply the gallons each month disposed of X 8) _____ LBS

RINSE WATER SLUDGE[1]
(multiply the gallons each month disposed of from a recirculating spray cabinet X 8 lbs/gallon) _____ LBS

OTHER RINSE WATER
(multiply the gallons of water per month sprayed directly on parts that goes down a drain, or on the ground X 8) _____ LBS

ALUMINUM PARTS CLEANER
(multipy the gallons each month disposed of X 12) _____ LBS

PARTSWASHER SOLVENT TANK
(multiply the gallons changed with each service from waste hauler X 8) _____ LBS

OTHER SPENT SOLVENT
(multiply the gallons disposed of per month X 8) _____ LBS

OVEN AND TUMBLER RESIDUE
(pound of ash per month) _____ LBS

GLASS BEAD DUST OR STEEL SHOT RESIDUE
(pounds of dust per disposal, if hazardous) _____ LBS

SPENT COOLANTS AND SLUDGE
(pounds of sludge per disposal, if hazardous) _____ LBS

[1] Used hot tank solution and rinse water from spray cabinet washers **does not** need to be counted if treated in the existing process tank under certain BMP's (see page 11).

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(continued from page 13)

SUMP SLUDGES
(pounds of sludge per disposal, if hazardous) _____ LBS

PAINT WASTES
(pounds of hazardous waste by products per month) _____ LBS

SPENT RUST INHIBITOR
(multiply the gallons of each batch disposed of X 8) _____ LBS

OTHER HAZARDOUS WASTES
(pounds per month) _____ LBS

TOTAL

- ✔ If any one answer or combination of answers totals over 220 lbs., you are a **Regulated Generator** required to meet compliance Steps 1-10 discussed below.

- ✔ You are a **Small Quantity Generator** if you always generate less than 220 lbs. of hazardous waste per month or batch and always dispose of the waste before you accumulate more than 2,200 lbs. Small quantity generators are required to comply only with Steps 1 and 8 (and 3 if you already have an active RCRA ID Number).

STEP 1 IDENTIFY YOUR WASTE AND GENERATOR STATUS

You must determine if any of your wastes are regulated as hazardous wastes by following the "designation" procedures in the Dangerous Waste Regulations. First look for each of your wastes on the Discarded Chemical Products and Dangerous Waste Sources Lists in the regulations. This is where you'll find **listed** wastes. Then, if the waste is not on the lists, determine if it exhibits any of the hazardous waste **characteristics** (ignitability, corrosivity, reactivity, leachability). If the waste is not on the lists, and does not exhibit a characteristic, then generators must evaluate their waste using available data or testing to see if they meet the **criteria** of toxicity or persistence. **Note:** Additional designation for criteria toxicity is required for small quantity generators (generating less than 220 lbs. per month and accumulating less than 2,200 at any time) to determine if a waste that has designated as a dangerous waste with a quantity exclusion limit of 220 pounds will also designate as an extremely hazardous waste, regulated at 2.2 pounds. Additional designation for the criteria of toxicity and persistence is also required in other specific instances, and generators should refer to WAC 173-303-070(5) for further guidance, or contact your nearest Ecology hazardous waste compliance specialist at: Bellevue (425) 649-7000, Olympia (360) 407-6300, Spokane (509) 456-2926 or Yakima (509) 575-2490.

To see how machine shop wastes fit into the state's different hazardous waste categories, turn to page 20 (after Steps 1-10). Determine your generator status (see pages 11 - 12). Request "Step by Step" Fact Sheet #1 for more help in designating your wastes (see page 21).

STEP 2 OBTAIN A GENERATOR IDENTIFICATION NUMBER

If you are a regulated generator, you are required to notify Ecology of your hazardous waste activities and obtain a site-specific RCRA Identification Number using Form a 2 (available from Ecology). Many hazardous waste haulers and management facilities are also required to have an Identification Number. They may not accept your waste if you don't have an Identification Number - even if you're a Small Quantity Generator and aren't legally required to have one.

STEP 3 REPORT ANNUALLY

If you have an active RCRA Identification Number, you must submit an annual report (using Ecology's Dangerous Waste Annual Report forms) by March 1 of each year, even if you have not generated waste in that year. Record your hazardous waste activities for the previous calendar year on this report, including how much waste you've generated or accumulated on-site and waste you've sent off-site.

To assist generators, Annual Report workshops are typically held at various locations in the state in February.

STEP 4 PERFORM PREVENTIVE MAINTENANCE

Hazardous wastes must be handled in a manner that prevents leaks, spills, fires and explosions. Develop and follow a written inspection schedule for all hazardous waste storage areas, containers and tanks and include all emergency, safety and monitoring equipment on-site.

Keep the necessary emergency equipment (such as fire extinguishers and telephones) on hand and accessible to employees. You must regularly test and maintain all your emergency equipment. Notify local authorities (such as police, fire departments and local hospital) of the characteristics of hazardous waste generated at your site, as well as the facility layout and access routes.

STEP 5 PROPERLY ACCUMULATE HAZARDOUS WASTE

Machine shops that generate less than 2,200 lbs. per month or batch can accumulate their hazardous waste for up to 180 days from the date it is first generated before they must manage it on-site or send it to an appropriate facility. Generators of 2,200 lbs. or more per month may only accumulate wastes for 90 days.

While accumulating your wastes, you must follow requirements for safe and proper storage, labeling and management of wastes:

- Establish and clearly mark an accumulation area. Don't have wastes scattered all over your shop, although you may accumulate wastes in satellite accumulation areas as described in -200(2) and in Ecology's Satellite Accumulation Guidance. If constructed after September 30, 1986, your accumulation area must have a containment system, such as a diked concrete area, that is capable of holding leaks and spills.
- Place the waste in an appropriate container and mark it with:
  - the words "Hazardous Waste" or "Dangerous Waste" (some generators find it more convenient to use hazardous waste labels);
  - a label identifying the waste's major risk(s) (for example, "ignitable"); and
  - the accumulation start date (when you first put the waste in the container).
- Comply with the requirements for preventive maintenance, emergency planning and container management summarized in Steps 4, 6, and 7 of the Guide.

STEP 6 PLAN FOR EMERGENCIES

There must be an emergency coordinator on the premises or on call at all times who is familiar with the operations and activities at the site and has the authority to commit the resources necessary to deal with a hazardous waste emergency. In a small shop, this will probably be the owner or manager.

Planning for emergencies can help prevent a small spill from turning into a dangerous and expensive contamination problem. Make sure you train your employees to know how to react to different types of emergencies in your shop.

STEP 7 USE PROPER CONTAINERS AND MANAGE THEM CORRECTLY

Many hazardous waste incidents and work-related injuries are linked to improper or unsafe container management. To avoid these preventable accidents:

- Accumulate your wastes in containers which are sturdy, compatible, leak-proof, properly labeled, and kept closed unless waste is being added or removed;
- Do not accumulate incompatible wastes in the same container or in the same areas;
- Store reactive and ignitable wastes according to the Uniform Fire Code;
- Maintain a minimum aisle space of 30 inches between container rows; and
- Inspect containers and storage areas at least once a week, keeping a log of inspections.

STEP 8 ARRANGE FOR PROPER TRANSPORTATION AND DISPOSAL

As a generator of hazardous waste, you are responsible for following regulations for the safe transportation and disposal of your waste, even after it leaves your premises. Before transporting hazardous waste off-site, you need to make sure it is packaged, labeled and marked in accordance with U.S. Department of Transportation hazardous material regulations. Call (360) 753-6427.

Regulated Generators must hire a transporter that has a RCRA Identification Number and ensure wastes are handled at a permitted hazardous waste treatment, storage or disposal (TSD) facility or at a facility that legitimately recycles or reclaims hazardous waste. Small Quantity Generators can transport their own wastes or make sure they are sent to a:

- permitted hazardous waste facility;
- legitimate recycler;
- facility permitted to handle moderate risk waste; or
- a permitted solid waste facility, if allowed by the local health department.

STEP 9 MANIFEST SHIPMENTS OF HAZARDOUS WASTE

To ship hazardous wastes off-site, Regulated Generators must prepare a Uniform Hazardous Waste Manifest Form which identifies the contents of the shipment, the transporters used and the permitted facility receiving the wastes. This form accompanies the waste from the site where it is generated to its ultimate resting place and back to you for your records. If you are a Regulated Generator your waste hauler needs to use a manifest and not just issue a bill of lading or receipt.

Some hazardous wastes are restricted from land disposal unless they meet specific treatment standards. If you send your waste off-site for disposal, you must prepare and sign a certification which states that either your waste is not restricted from land disposal or that it meets the treatment standards outlined in the regulations. This land disposal restriction certficate is attached to the manifest form for the shipment.

Often the waste hauler fills out these forms and you just sign them. You should carefully check all information before signing.

If a signed return copy of the manifest has not been received from the waste management facility within 35 days of the shipment date, you must try to determine what has happened. Submit an exception report documenting your efforts to Ecology if you have not received the last copy of the manifest form within 45 days of the shipment date.

STEP 10 KEEP RECORDS OF HAZARDOUS WASTE ACTIVITIES

There are a number of records, reports and forms machine shops must prepare under the Dangerous Waste Regulations and keep on the premises for at least five years, including annual reports, manifest forms, exceptions reports, and land disposal restriction certificates. Keep copies of notification reports (Form 2), inspection records, results from waste analyses or tests, and on-site recycling records for as long as you are in business.

Machine Shop Hazardous Wastes by Waste Category

The following table shows where typical machine shop wastes fall in the state's hazardous waste categories. Your wastes may be different, depending on the chemicals and processes you use. Testing may be necessary to determine whether certain wastes are hazardous.

Major Category	Hazardous Waste Type	Machine Shop Examples
Listed Wastes	Discarded Chemical Products	not typically generated by machine shops
	Dangerous Waste Sources	cold tank carb cleaner (methylene chloride)
		other chlorinated solvents
Characteristic Wastes	Ignitable	spent valve tumbler solvent
	Corrosive	spent hot tank solution & sludge
		spent rinsewater & sludge
	Reactive	not typically generated by machine shops
	Toxicity Characteristic (TCLP)	spent hot tank solution & sludge
		spent rinsewater & sludge
		glass bead blaster dust (possible)
		grinding coolant sludge (possible)
		paint wastes
		steel shot residue (possible)
Criteria Wastes	Toxic	rust inhibitor
	Persistent	methylene chloride from aluminum parts cleaning
		other solvents with word "chlor" as part of main ingredients
		spent coolants containing chlorinated compounds

Where to Get More Help

It's your responsibility to safely manage wastes generated at your facility. Don't be afraid to ask for help. Ecology can help you keep up-to-date and in compliance with the regulations. For additional information and assistance, contact the nearest Ecology Regional Office and ask for a Hazardous Waste Specialist. To receive any of the following publications, contact Ecology's Publications Office at (360) 407-7472.

Clean Air Washington Information Packet
(1992, #FA92-13)

Discussion on the Toxicity Characteristic Rule
#96-427

Free Help for Businesses
#96-407

Regulation of Dangerous Waste Being Recycled
#91-426, Revised 1994

Shoptalk, a quarterly newsletter for hazardous waste generators

Step by Step: Fact Sheets for Hazardous Waste Generators, includes Glossary, Subject Index, and Services Directory
#91-12a-s, Revised 1997

Success Through Waste Reduction - Proven Techniques from Washington Businesses
#90-22

The Dangerous Waste Regulations
(Chapter 173-303 WAC)

Waste Reduction for Your Business
#89-56, Revised 1991

Hazardous Waste Services Directory
#98-412

Waste Reduction for Vehicle Maintenance Shops
#92-107

Waste Minimization for Production Painting Operations
#96-405

Changes to the Dangerous Waste Regulations: Are you Affected?
#96-403

What is a Small Quantity Generator: Your Regulatory Status Under the Dangerous Waste Regulations
#96-404

Treatment by Generators Fact Sheets

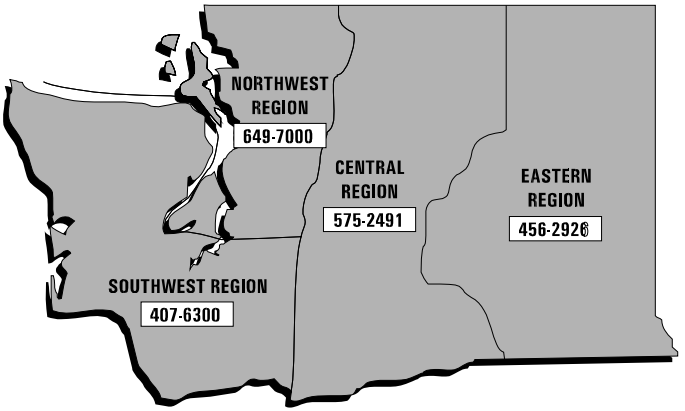
Elementary Neutralization
#96-417

Evaporation Treatment Specific Guidance
#96-414

Separation Treatment Specific Guidance
#96-418

The Department of Ecology wishes to recognize the many automotive associations listed on the back cover and the automotive businesses who contributed their time and expertise in creating this booklet.

While this booklet summarizes some of the requirements for generators of automotive waste under the Dangerous Waste Regulations (Chapter 173-303 WAC), it does not replace them. Always refer to the regulations themselves for more details or contact the nearest Ecology regional office.



Department of Ecology Regional Offices

Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008
(425) 649-7000

Southwest Regional Office
300 Desmond Drive
P.O. Box 47775
Lacey, WA 98503-7775
(360) 407-6300

Central Regional Office
15 West Yakima Avenue
Yakima, WA 98902-3401
(509) 575-2490

Eastern Regional Office
North 4601 Monroe
Suite 100
Spokane, WA 99205-1295
(509) 456-2926

Automotive Service Association

Autobody Craftsman Association

Washington State Auto Dealers Association

Auto United Trades Organization

Washington Automotive Wholesalers

Northwest Tire Dealers Association

Automotive Engine Rebuilders Association

Automotive Engine Rebuilders Association

Production Engine Remanufacturers Association

Nation Automotive Radiator Service Association